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RECENT PUBLICATIONS.

REVIEWS.

Plane Algebraic Curves. By HAROLD HILTON. Oxford, at the Clarendon Press, 1920. 8vo. 16 + 388 pages. Price 28 shillings.

Preface: "Though the theory of plane algebraic curves still attracts mathematical students, the English reader has not many suitable books at his disposal. Salmon's classic treatise supplied all that could be desired at the time of its appearance, but the last edition was published some forty years ago, and has been long out of print. It seemed therefore as if a new book on the subject might be useful, if only to bring some more recent developments within the reach of the student.

"In the preparation of this volume I have made frequent use of the books written by Salmon, Basset, Wieleitner, Teixeira, Loria, &c. But most of the contents and examples are extracted from a very large number of mathematical periodicals. With the exception of the list at the end of Ch. XX, I have not attempted to give systematic references. In fact, in a field which has attracted so many workers, it would be almost impossible to trace the steps by which particular results have reached their present form. In some cases I cannot even remember whether a result is my own or not; but Chapters IX, XI, XVII, and XVIII contain most of my own contributions to the subject. The solutions are mine for the most part, even in the case of examples derived from other authors.

"In a book dealing with so wide a subject I can hardly hope to escape the criticism that I have included just that material which happens to interest myself, and have excluded other matter of equal or greater importance. I have not seriously dealt with problems of enumeration, such as 'How many conics touch five given conics?' I have treated all curves with the same degree and singularities as forming a single type, and have not attempted to subdivide the type by considering all their possible positions relative to the line at infinity. I have not given the properties of 'special plane curves,' unless they are representative of some general type, such as, for example, Cassinian curves, into which any quartic with two unreal biflexnodes can be projected. I have not included any discussion of curves of degree n for special values of n other than 2, 3, or 4. A thorough discussion of quintic curves would be very welcome, but at present the difficulties seem insuperable. At any rate very little work has been published on their properties. The reader will doubtless detect other important omissions. But on the whole I have tried to cover the limited ground I have selected with reasonable completeness.

"No one can really master a branch of mathematics except by working at it himself. I make no apology, therefore, for the long lists of examples. The reader can select from them few or many, as he pleases. I have given hints for solution in most cases. I hope that these will be of real assistance to the student, setting him on the right track if he is in difficulties, enabling him to check the accuracy of his results, and giving him a guarantee that the examples are not of unreasonable difficulty."

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Pioneers of Progress: Kepler. ("Men of Science" series, edited by S. Chapman.) By W. W. BRYANT. London, Society for Promoting Christian Knowledge, 1920. 62 pages + portrait frontispiece of Kepler. Cloth. Price 2 shillings. We have referred already (1921, 133) to the volume on Archimedes, by Sir Thomas L. Heath, in this admirable little series of biographies.